MEMEX

Measuring Manufacturing Excellence™

Empowering Smart Manufacturers with IIoT Centric Results: Harnessing the Power of IIoT

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GENERIS

Q1. What is your advice to manufacturers who are trying to stay ahead of their competitors in such a fast-paced industry, especially in the IIoT era?

The Industrial Internet of Things or Industry 4.0 as some call it is all about real-time data that can be shared by Operators and Engineering, Production and Management teams to improve productivity and ultimately profit.

To do that, every machine, whether old or new, must be embraced as a node on the corporate network. Once that connectivity occurs data starts flowing. Everyone on the shop floor right up to the top floor can take advantage of dashboard reports on any Web enabled device to check the status of single or multi-plant operations to any level of detail they require.

It’s important to understand that data-driven manufacturing doesn’t have to be a cumbersome, lengthy or expensive custom IT project. We’re now to the point where a zero-programming tool-kit approach can make this happen in a few weeks. Ironically, the biggest obstacle is no longer technology, or budget. The ROI is well documented and your competitors may already be enjoying this competitive advantage. The chief obstacle is human – the willingness to both receive and act on objective data as it’s presented in real-time. Continuous Improvement becomes ingrained in each and every shift.

Q2.

In your opinion, what does the factory of the future look like?

For our customers, the factory of the future looks exactly like their factory today. All of their machines are connected, including legacy machines, taking advantage of the MTConnect protocol to produce real-time data.

They're displaying not just OEE but Financial OEE. FOEE dashboards tell them exactly how much money they're making on a per part or per machine basis.

At the machine level, they're tying in process-driven sensor data to collect, visualize and analyze real-time analog inputs on things like temperature, humidity, noise level, power consumption, vibration, and acceleration.

And at the enterprise level they're tying in to the ERP system to measure the overhead costs of the manufacturing process and able to instantly tell their customers where their part is in the manufacturing process and exactly when it will be delivered.

Q3. Why is the value proposition for Data-Driven Manufacturing so compelling?

Over and over again, our customers are showing a 10 to 50 percent productivity increase.

They're seeing 20 percent-plus profit improvements based on just a 10 percent increase in OEE. They're achieving payback on in less than four months with Internal Rate of Return greater than 300%. And with our smart manufacturing tool-kit deployed and real-time data analysis embedded in a CI culture, they can reveal ongoing factory productivity gains for years to come. The first taste of this kind of data optimization feeds the hunger for still more data to drive plant productivity and profit.

Q4. What are the strategic questions that a manufacturer should ask to harness the full potential of IIoT in their business?

Am I honestly getting objective, real-time data from every machine on my factory floor right now?

If I got that kind of data, how am I going to create the culture of collaboration around it so that Continuous Improvement becomes a daily ritual on every shift?

Is my senior management team ready to react to information that impacts profitability on a daily or even hourly basis, or will they still be content to measure success based on income statements that reflect what happened a month or even an entire quarter ago?

How do I make sure that the drive for IIoT or Industry 4.0 doesn’t turn into an IT turkey-trail of exotic and expensive system integration? Can I find a proven supplier who’s been-there-done-that and has technology backed by methodology to get me where I want to go?

What operational and financial benchmarks should I rely on to tell me if I’m succeeding?.

Q5. How do companies make time to find improvement opportunities offered by IIoT, while dealing with day-to-day operations?

Most of our customers install large TV monitors throughout their plant, or even above every machine, to display manufacturing performance metrics. Data-Driven Manufacturing isn't an interruption in their day. It is their day. So "making time" is really "making money".

Let me give you an example. At Mazak, VP of Manufacturing Ben Schawe stated that data-driven manufacturing efforts to reduce downtime yielded a 42% improvement in utilization for the monitored machines. In addition, his company reduced operator overtime by 100 hours per month and 400 hours per month of previously outsourced work was returned to Mazak. He said that his manufacturing team can tell at a glance how they are doing, and the basis is in both real-time and historical data, whereas before it was difficult to find information if it was even available.

Q6.

In your experience, what has the outcome been like when companies use an Automated data collection Approach and invest in a culture of innovation?

We provide a very easy to understand Return On Investment calculator to our customers. For a small job shop running 10 machines five days a week, eight hours a day with a loaded labour cost of 85 dollars an hour, the impact of saving just five minutes per hour per machine is stunning.

Total time saved per machine = 0.67 hours. Total production time recovered per day for all machines = 6.7 hours. Total project spend on data-driven manufacturing = $63,000. Total cost saved in the first 12 months = $142,000. Internal return rate of capital = 200%. Payback period is less than six months. Total Savings over three years = $452,000

If we ramp those ROI calculations to a medium-sized shop running 30 machines five days a week, 16 hours a day with the same loaded labour cost of $85 an hour, the total project spend on our data-driven manufacturing tool-kit = $149,00. Total cost saved in the first 12 months = $850,000. Internal return rate of capital = 400%. Payback period = 3 months. And total savings over three years = $2,550,000.

We have multi-plant installations where the savings have run into the tens of millions of dollars over two or three years. When factory teams have the data available to them to make better decisions, and management empowers them to act on the data they’re getting throughout their shifts, company-transforming profitability is the end result.

Delivers a 10%-50% average productivity increase with an acknowledged industry leader

Earns 20%-plus profit improvement based on just a 10% increase in OEE

Ensures no machine is left behind, connecting them with MTConnect, other protocols, or MERLIN hardware adapters for older machines

Achieves payback in less than four months with an Internal Rate of Return greater than 300%

Reveals ongoing factory productivity gains and ROI for years to come with MEMEX's Continuous Improvement Fast-Track Services

About MEMEX

The award-winning MEMEX smart manufacturing tool-kit makes the Industrial Internet of Things (IIoT) and Industry 4.0 come alive on the factory floor. MERLIN Tempus is the took-kit's software foundation. It equips industrial machines with the necessary interfaces for data-driven manufacturing, then presents that data in Web-enabled dashboard reports so machine operators, factory managers, engineers, production managers, continuous improvement managers and senior management can work together to dramatically improve productivity and profit. MERLIN Tempus delivers a 10%-50% average productivity increase, earns 20%-plus profit improvement based on just a 10% increase in Overall Equipment Effectiveness, achieves payback in less than four months with an Internal Rate of Return greater than 300%, and ensures no machine is left behind – connecting them with MTConnect, other protocols, or MERLIN hardware adapters for older machines. Combined with MERLIN Tempus, MEMEX's Continuous Improvement Fast-Track Services reveal ongoing factory productivity gains and ROI for years to come. To learn more, please visit:

MemexOEE.com